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# RT6XX MODIFIED-TRANSMITTER COIL DATA.

## 1.0 OSCILLATOR COIL.

### 1.1 HIGH BAND.

19 TURNS #24 ENAMEL WIRE WOUND ON G2 CORE MATERIAL IN A CUP FORM RESEMBLING A TOROID CUP ½" DIAMETER, 3/16" THICK
L = 2.35 μh Q = 170

### 1.2. LOW BAND

26 TURNS #30 ENAMEL WIRE SPACED WIRE DIAMETER ON A 7/16" DIAM COIL FORM SLUGGED WITH G1C .375 DIAM x 3/4" LONG SLUG.
L = 14.1 μh Q = 150

1.3. TOTAL L (HB + LB COILS) = 16.1 μh Q = 150.

1.4. H.B. TOROID PLACED ON TOP OF L.B. COIL AND INSTALLED IN SAME MOUNTING HOLE AS ORIGINAL.

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# BT6-XX MODIFIED TRANSMITTER

## 2.0 POWER AMPLIFIER COIL DATA.

### 2.1 HIGH BAND COIL.

9 TURNS #22 BARE TINNED
ON 1" DIAM FORM PITCH 22/IN
FORM MATERIAL (EXPERIMENTAL) LUCITE.
$L = 2.3\ \mu h$ $Q = 200-225$

TAPS, DETERMINED BY CALCULATION
AND EXPERIMENT.
$Z_T$ CALCULATED FROM ORIGINAL COIL
TAPS:

| | | |
|---|---|---|
| 70 Ω | = | 1625 Ω |
| 150 Ω | = | 2500 Ω |
| 300 Ω | = | 2340 Ω |
| 600 Ω | = | 3420 Ω |
| 1200 Ω | = | 3760 Ω |

BASED ON $\frac{N_T}{N_a} = \sqrt{\frac{Z_T}{Z_a}}$ WHERE $N_T$ = TOTAL TURNS
$N_a$ = TAP
$Z_T$ = TOTAL Z
$Z_a$ = ANT Z ($R_a$)

CALCULATION FOR NEW COIL WITH SAME $Z_T$

| | TAP | USE |
|---|---|---|
| 70 Ω = | 1.87 | 1.75 |
| 150 Ω = | 2.2 | 2.25 |
| 300 Ω = | 3.2 | 3.25 |
| 600 Ω = | 3.72 | 3.75 |
| 1200 Ω = | 5.1 | 5.0 |

$X_L$ @ Tune = 101 Ω
$X_L$ @ 16.5 mc = 238 Ω

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# RT6XX MODIFIED - TRANSMITTER

2.2. ~~#~~ LOW BAND COIL.

23 TURNS #26 BARE TINNED PITCH 22/IN USING 8-G5 SLUGS DIAM. .200 AND 1-GIC SLUG .375 DIAM. G5 SLUGS EQUALLY SPACED WITHIN COIL FORM AND BETWEEN CENTER AND OUTSIDE LIMITS OF COIL FORM. GIC SLUG IN CENTER. DEPTH 1⅛. COIL FORM LENGTH 1¼" DIAM. 1", MATERIAL (CXP) LUCITE. CENTERS OF G5 SLUGS ON RADIUS OF 11/16".

L = 17.2 μh Q = 220

TAPS CALCULATED USING ZT CALCULATED FROM ORIGINAL COILS.

| ORIG. ZT. | ~~TAP.~~ | RL (ZL) |
|---|---|---|
| 2520 Ω | | 70 |
| 2760 Ω | | 150 |
| 2700 Ω | | 300 |
| 3750 Ω | | 600 |
| 4210 Ω | | 1200 |

USING ZT ABOVE

| ZL | TAP. |
|---|---|
| 70 | 3.75 |
| 150 | 5.25 |
| 300 | 7.5 |
| 600 | 9.0 |
| 1200 | 12.0 |

XL @ 3 MC = 324 Ω

XL @ 7 MC = 755 Ω.

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# RT6-XX MODIFIED TRANSMITTER TUBE DATA.

## 3.0 OSCILLATOR STAGE.

3.1. 6BC5 TUBE USED IN PLACE OF ORIGINAL 6AG5.

3.2. NO CHANGES IN RESISTORS OR CONNECTIONS REQUIRED.

## 4.0 P.A. STAGE.

4.1. 2E26. POWER AMPLIFIER REMAINS UNCHANGED.

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5.0.0 MODIFICATIONS ASSOCIATED WITH COIL CHANGES, PHYSICAL.

5.1.0 LOW BAND COIL MOUNTED ON END ~~OF~~ ON SUB PANEL RATHER THAN LYING IN HORIZONTAL POSITION AND SUPPORTED AT END OF CHASSIS.

5.1.1 THIS ARRANGEMENT REDUCES EFFECT OF COVER WITH REGARD TO COIL Q.

5.2.0 THIN COPPER PLATE PLACED BETWEEN BOTTOM COVER AND COIL ENDS BOTH ON H.B. & LOW-BAND.

5.2.1. THIS ARRANGEMENT FURTHER REDUCES EFFECT OF COVER ON COIL Q.

5.2.2. REMOVAL OF JUMPER FROM FREQUENCY CHANGE SWITCH THUS ELIMINATING ~~PARALLEL~~ PARALLEL CONNECTION OF LOW & HIGH BAND COILS WHEN IN HIGH BAND POSITION.

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